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7.7-1013.0 II  
OR-154265  
Bangladesh LANDSAT-2 PROGRAMME

FOI(b)(7)(E)

I. INTRODUCTION

Title of Investigation : Investigations using data from Landsat-2

Investigation Number : #G 27950

Principal Investigator : Dr. Anwar Hossain

Name & Address of Principal Investigator's Organisation : Bangladesh LANDSAT programme  
LANDSAT CENTRE,  
House No. 605, Road No. 18,  
Dhanmondi R/A, Dacca, Bangladesh.

Date : July 1977.

Type of Report and period covered : Quarterly Report  
April-June, 1977.

Name & Address of Sponsoring Agency : Bangladesh National ERTS programme  
Science & Technology Division,  
Ministry of Education,  
Government of The People's Republic  
of Bangladesh, Dacca.

II. TECHNIQUES

Conventional photographic techniques were used to reproduce the Landsat imageries. Using positive films, a good number of DIA-POSITIVES (Positive transparency) in all bands have been made locally from EROS Data Centre's Negatives (9.5"x9.5"). These Dia-Positives have been used for preparing Diazo colour prints of various scenes in different colour combinations for interpretation & analysis in conjunction with ground truth data. Small areas were also blown up and diazo prints were made for studies.

A Planvariograph-model R & A Rost (Wien) No. 25801 has been recently

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A Planvariograph-model R & A Rost (Wien) No. 25801 has been recently commissioned in the laboratory. This has been used for enlargement and reduction of different maps/photo scenes.

Order have been placed for some other equipment such as Density Slicer, Additive viewer, Zcom Transferscope etc.

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(E77-10199) INVESTIGATIONS USING DATA FROM  
LANDSAT-2 Quarterly Report, Apr. - Jun.  
1977 (Atomic Energy Commission) 7 p  
HC A02/MF A01

N77-30559

CSCL 05B

Unclas  
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### III. ACCOMPLISHMENTS

1. Bangladesh is developing its capability in Satellite Remote Sensing with UNDP assistance and with continuous supply of Landsat imageries from EROS Data Centre. ERTS Task Force has made significant progress in this new Technology.
2. A five member delegation from Bangladesh consisting of the following participated in the ESCAP Inter-governmental meeting on Remote Sensing and Satellite Surveying held in Bangkok from June 7-13, 1977.
  - (1) Dr. Anwar Hossain  
Principal Investigator ( Director-General )  
Bangladesh ERTS (Landsat) Programme &  
Chairman, Bangladesh Atomic Energy Commission.
  - (2) Mr. Shamsul Huda  
Deputy Secretary  
Science & Technology Division  
Ministry of Education  
Government of Bangladesh.
  - (3) Mr. M.A.H. Pramanik  
Chief Investigator, ERTS Programme and  
Principal Scientific Officer &  
Director (Instrumentation), SARC  
Bangladesh Atomic Energy Commission.
  - (4) Mr. M.U. Choudhury,  
Chief Investigator & Secretary,  
ERTS Task Force &  
Deputy Secretary, Forest, Fisheries &  
Livestock Division  
Ministry of Agriculture.
  - (5) Mr. Kazi Afzalur Rahman,  
Liaison Officer of Bangladesh to ESCAP  
Embassy of Bangladesh, Bangkok.

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Dr. Anwar Hossain, Principal Investigator, Bangladesh ERTS (LANDSAT) Programme and Chairman, Bangladesh Atomic Energy Commission who was the leader of Bangladesh delegation, was elected as Chairman of the Technical and Drafting Committee of the meeting.

2.2 The meeting discussed the latest developments in the ESCAP countries in the field of Remote Sensing and Satellite Surveying. The concept of regionalisation of country facilities, research & development activities, training programme and other proposals in the field were discussed.



2.3 Bangladesh's favourable geographic position for regional ground station has been strongly projected in the meeting. Bangladesh also offered to host a Regional Centre in Dacca for Remote Sensing and Satellite Surveying for the ESCAP Countries.

2.4 Bangladesh ERTS (Landsat) programme has formally submitted a scheme for setting up a National Remote Sensing Centre with a dual purpose satellite ground station for receiving real time data from both resource as well as meteorological satellites. The Government of Bangladesh has agreed in principle to establish the dual purpose receiving station and is seeking international support for its development as a regional one. The centre can also act as a receiving centre for Seasat in the region.

3. Analysis of Landsat pictures in conjunction with ground truth data and Diazoprints of some test areas are being made for acreage estimation and crop yield. Analysis made earlier of Sylhet-Mymensingh Haor areas is being revised with latest Landsat pictures.

4. Bangladesh LANDSAT programme has received an IDRC grant of \$ 131,900 for special research studies using LANDSAT imageries. This grant has been finalized during the period under report.

5. Dr. R. Protz of the University of Guelph, Canada visited Bangladesh for two weeks from April 14-25, 1977 in connection with IDRC project in Bangladesh. He met Chief Investigators of all sectors and held discussions with other scientists and senior Officials in the Ministry of Planning and Ministry of Education. His report is enclosed.

6. Prof. M. I. Choudhury and Dr. K. Maudood Elahi of Jahangirnagar University attended the Eleventh International Symposium on Remote Sensing of Environment, held in April 25-29, 1977 at ERIM, Michigan, USA under the sponsorship of Bangladesh ERTS (LANDSAT) Programme. They presented a paper to indicate whether remote sensing data for Landsat imageries could be used for identifying & mapping landuse patterns of the Haor areas in Bangladesh. Emphasis has been laid on the study of signatures related to agriculture and allied landuse.

7. Prof. Abul Fazal, Honourable Member of the President's Council of Advisers in charge of Ministry of Education, visited the ERTS (Landsat) Centre on May 18, 1977.

8. Dr. A. M. Choudhury, Chief Investigator, Meteorology Sector, ERTS (Landsat) Programme, attended the WMO/ESCAP Tropical Session on Tropical Cyclones held at Dacca from April 12-18, 1977.

9. During this period two meetings of the Task Force were held on April, 1 and June 28, 1977, to review the progress of work and to discuss various matters connected with the ERTS (Landsat) programme.

10. During the period under report the laboratory space has been increased and furnished. Supporting staff for the programme has also been recruited.

11. A two day seminar/workshop on Remote Sensing and Satellite Surveying is being Organized by Bangladesh ERTS Programme. Main Speaker of the Seminar/Workshop will be Dr. Z.D. Kalensky, a Canadian Expert from the Forest Management Institute, Environmental Management Service, Ottawa, Canada. Dr. Kalensky is at present working in Indonesia as a Remote Sensing Expert. He visits Bangladesh under UNESCO sponsorship at the invitation of S & T Division, Ministry of Education. (June 30 to July 3, 1977).

#### IV. SIGNIFICANT RESULTS

1. Mosaic map of coastal area of Bangladesh in band 4 has been supplied to Bangladesh Inland Water Transport Authority (BIWTA) in connection with the preparation of a Govt. paper on "Delineation of Base line for Bangladesh coast" required for the UN Conference on the Law of Sea held in New York. The work has been proved very useful for the purpose and has been appreciated by government authorities.

2. Bangladesh's proposal for research and development in the field of flood forecasting & water resources management and coastal zone monitoring on a regional basis using satellite Remote Sensing Technology was accepted in the ESCAP Inter-governmental meeting held in Bangkok from 7-13, 1977.

3. The ESCAP Inter-governmental meeting also discussed and adopted Bangladesh's proposal for the strengthening of activities of the ESCAP Secretariat to ensure progressive sharing of experience and knowledge in the field of Remote Sensing and Satellite Surveying in the region.

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4. Geology sector used the satellite pictures to distinguish the Modh-upur clay of the Barind surface from the recent Alluvium of the old and present day drainage;
5. Significant results have been obtained from the Diazo colour combinations study of small areas in Demra/Savar area, blown up few times which were indentified from Landsat imageries,
6. Water Sector has collected ground truth data which will be used with Landsat imageries,

V. PUBLICATIONS

The following papers/articles/reports etc. have been published during this period.

1. Remote Sensing and Satellite Surveying (A back ground paper on the latest position of the states of Remote Sensing and Satellite Surveying in Bangladesh) - Dr. Anwar Hossain, Principal Investigator, Bangladesh ERTS (Landsat) Programme;  
Presented at the ESCAP Inter-governmental meeting on Remote Sensing and Satellite Surveying, held in Bangkok from June 7-13, 1977.
2. A combined ground station for both resource as well as meteorological Satellites - M.A.H. Framanik and M.K. Anam.

Presented at the Brain Storm Session of Bangladesh Atomic Energy Commission (BAEC) held in May 16-17, 1977.

3. Space Programme for Bangladesh.  
- Dr. A. M. Choudhury  
Presented at the Brain Storm Session of BAEC held in May 16-17, 1977.
4. Land utilization and ecological aspects in the Sylhet-Mymensingh Haor region of Bangladesh : (An analysis of Landsat data) : Prof. M. I. Choudhury and K. Maudood Elahi.  
- Presented at the Eleventh International Symposium on Remote Sensing of Environment, held at Environmental Research Institute of Machigon, USA from April 25-29, 1977.
5. A mosaic map of coastal area of Bangladesh Band 4 (April 1977).
6. Mosaic map for coastal Afforestation Programme in Band 6 using Landsat imageries of 1976, (April, 1977).

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7. Mosaic map of coastal area & South-Western Region of Bangladesh in Band 7 using Landsat imageries of 1973, (April 1977).
8. Mosaic map of Coastal area & South-Western Region of Bangladesh in Band 7 using Landsat imageries of 1976-(April 1977).

#### VI. PROBLEMS

Appointment of Remote Sensing Adviser by F.A.O. under the UNDP Programme has been delayed, but Prof. Macleod has been finally selected and he is coming soon. Full time Officers are yet to be appointed but supporting staff have been appointed. Procurement of equipment under UNDP Programme is also delayed.

#### VII. DATA QUALITY AND DELIVERY

The quality of Data products is good. We have received Landsat-2 imageries from EROS Data Centre upto March 1977. We are yet to receive the data taken on special request for floods.

#### VIII. RECOMMENDATIONS

Bangladesh ERTS programme has submitted a proposal for setting up a National Remote Sensing Centre with dual purpose receiving station for Resource & Meteorological satellites with ultimate projection to make it a regional centre. NASA may assist in establishing a ground station in Bangladesh which will be of great use for this Cyclone prone area for dynamic feature studies of coastal areas particularly Marine resources and Land formation.

A proposal for participation in Landsat - C has been sent. This may be accepted.

Bangladesh's account with EROS Data Centre may be enhanced initially by \$ 20,000. This enhancement will help in getting continuous Landsat imageries from EROS Data Centre.

#### IX. CONCLUSION

It is felt that the real time data available from the proposed dual purpose satellite ground station will be of immense use to study the dynamic features, environmental monitoring and to plan the economic utilization of natural resources in Bangladesh.

Bangladesh desires to get continuous support from NASA in the future.

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